Udvari B. (ed) 2020: Proceedings of the European Union's Contention in the Reshaping Global Economy. University of Szeged, Doctoral School in Economics, Szeged, https://doi.org/10.14232/eucrge.2020.proc.11

The development of innovative SMEs in post-socialist countries

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The Small and Medium-Sized Enterprises (SMEs) are a necessary element of the social and economic development of the national economy from the perspective of their significant contribution to employment, innovative capacity, and flexibility. Innovative SMEs are necessary building block in the restructuring of transition economies. The successful reformers of the Central and Eastern Europe countries can promote policies conducive to the development of innovative SMEs, and consequently benefit from the economic advantages of SMEs. However, the majority of the Commonwealth of Independent States (CIS) countries are lagging behind significantly.

This paper gives the analytical description of the development of SMEs in post-socialist countries during the transition process within the framework of the market reforms. The main barriers to growth of SMEs with innovation capacity are the institutional environment, and the inadequate attitude of the government towards small companies. The countries which integrated to European Union been able to overcome these barriers considerably, while the CIS countries do not have a record of significant achievement in this area.

1. Introduction

Until the 1970s, the scientists did not pay enough attention to role of Small-Medium Enterprises (SMEs) in economic development. Economists investigated the development of the national economy against the background of the large companies. It was taken for granted that only gigantic companies were capable conducting Research and Development (R&D), introducing innovations, and improving efficiency (Klapper et al. 2006). "Since the early 70s, the main larger manufacturing companies began to lose competitiveness and the studies on the role of the SME in economic progress came to scene" (Klapper et al. 2006, p. 5). The measurement of innovative activity changed from R&D performance to the introduction of the new products and production process (Acs and Audretch 1988). The smaller companies outperformed the larger ones in the introduction of new products and production process, and turned into the providers of intermediate goods and services to larger companies (ibid). Another objective reason for scientists` reluctance to conduct research on the SMEs is the absence of consistent and reliable data sources to depict their business activity (Iwasaki 2012).

The transition to market economy in the Post-Socialist (PS) countries puts the importance of the development of SMEs on the agenda. Since the development of SMEs is the triggering force for successful transformation as well as its indicator. Particularly, SMEs are the driving force for building the innovative environment in PS transition countries. The gigantic companies, which were established during communism in PS countries, do not have sufficient innovation capacity due to lack of capital in the realm of the market economy. In such an environment, SMEs can

maneuver to adjust to requirements of the consumers by doing necessary innovating thanks to their flexibility and capacity for quickly responding to changeable market conditions. My conceptual framework is the measurement of the level of patents by SMEs in the background of a comparison with developed economies. I deploy this concept in evaluating the role of SMEs in economic restructuring and gaining national competitiveness in PS countries.

The distinctive features of the SME define its importance in economic and social progress. The average share of the SME in GDP is 50 percent across countries (World Bank 2017). It stands for 90 percent of the number of businesses and half of all employment globally (ibid). One of the distinguishing features of SMEs is their propensity to utilize labor intensive technologies and absorb the labor force**.** By opening up employment opportunity for society, SMEs are conducive to alleviating the poverty problem. It has special importance for PS countries because the period after the demise of communism was accompanied by intolerable levels of unemployment and poverty in those countries. Nevertheless, some of these countries have not yet achieved favorable levels of employment and affluence since the early years of the transition. I will touch on the main reason – incompleteness of market reforms in the abovementioned countries in more detail in the paper.

Another important feature of SMEs is their flexibility. Piore and Sabel (1984) claim that SMEs are more efficient than larger firms because they are more flexible. This relative flexibility allows SMEs to adapt to market and real condition by introducing new products and production process. The lower adaptation cost of the SME contributes to its flexibility (Sak–Taymaz 2004). It is important to pay attention to the terms of flexibility and lower adaptation cost in order to understand the role of SMEs in the transition of PS countries to functioning market economy. The flexibility is a necessary feature to restructure the national economy of the transition countries to a more efficient level. But this structural change incurs a cost, and PS economies are not capable of covering the cost of restructuring due to immature financial markets and weak states. Thus, the lower adaptation costs of SMEs allow taking initial necessary steps to contribute to the restructuring of the economy. In contrast, the larger companies lag behind in restructuring due to the huge cost of restructuring.

Apart from the above mentioned features, a significant proportion of SMEs is specialized in producing intermediate goods and services for larger companies. This capability facilitates the integration of the domestic economy to Global Value Chains (GVCs). Being the supplier for larger companies opens up the opportunity for advancing the economies of PS countries. So, there is great opportunity in attracting the export oriented FDI into PS countries, and the transition economies of Central and Eastern Europe (CEE) have not missed this opportunity. As the suppliers of the export oriented FDIs, the SME can achieve technological and organizational innovation and upgrade the national economy. The manufacturing companies Czech Republic, Hungary, Poland and Slovakia succeeded in benefitting from the positive spillover from FDIs (Ivanyi and Vigyari 2012). At the same time, they can integrate their national economies into GVCs.

In this paper, I will give an analytical description of the development of SMEs in PS countries of Central-Eastern, South-Eastern Europe, Baltic States. and

Commonwealth of Independent States during the transition process within the framework of the reforms. I will analyze the previous works on SME development in those countries, and investigate the prospects of innovative SMEs and their contribution to growing national competitiveness. The following section briefly touches on the differences in the development of the SME between developed and developing countries. After that, I will describe the emergence of the SMEs from scratch and the development of the innovative in PS countries. Later, I will specify the barriers for the development of the SMEs with innovation capacity in PS countries. The last section provides a conclusion.

2. SMEs in developing countries

As in other features of the economy and society, there are also considerable differences in the state of SMEs between developed and developing countries. As belonging to the category of developing economy, up to significant extent, the PS countries have similar differences with developed societies. Therefore, general understanding of the state of SMEs in developing countries will be a guide for an initial understanding the situation of SMEs in PS economies. The specificity of SMEs in PS countries will be analyzed in the forthcoming sections in detail. The SMEs of developing countries are at a disadvantaged position in terms of access to inputs, financial resources, human capital, and policy assistance in comparison with developed countries.

One of the most important distinctions is in access to capital. The traditional theories of capital structure explain the financing decisions of companies in advanced countries and are not quite powerful enough to explain the same decisions in developing countries, because their assumptions do not hold in developing countries. The institutional environment in developing countries impedes the emergence of developed financial markets. Absence of the full-fledged capital markets leads to widening of the asymmetric information between borrowers and companies. Under the condition of a high level of information asymmetry, SMEs have difficulty accessing formal sources of financial resources (Borgia–Newman 2012).

The neoliberal policies suggested in the 1970s and 80s for economic development in Latin American countries damaged the SMEs in those countries. SMEs are inherently disadvantaged in access to inputs, technology, financial resources, human capital, and policy support in comparison with larger corporations. As a part of globalization, trade and market liberalization placed SMEs in an even more disadvantaged situation. In contrast, the larger corporations could access the necessary resources to be competitive. As a result, a deep gap and dualism emerged between a small number of advanced foreign and larger national companies and smaller, outdated domestic firms (Parrilli 2007). The number of SMEs in Chile decreased from 60,000 to 40,000 between 1996–2000, and their sales dropped from USD 8 billion to USD 5.5 billion in the same period. Their market share was squeezed by imports as a result of liberalization of foreign trade. In this case, government intervention to coordinate the activity of SMEs is necessary in order to keep them competitive and alive. The government policy to assist the development of SMEs from

1960 to 1990s in central and northern Italy significantly contributed to the economic development of Italy (ibid). A small number of researchers claim that the Italian approach could be applied in other developing countries (Schmitz 1989).

Regarding the state of SMEs, the main differences between developed and developing countries are higher levels of uncertainty and the absence of adequate government assistance to SMEs in developing countries. Weaker state apparatus and property rights cause SMEs have considerable difficulty in accessing necessary capital and input in the background of immature financial markets. On the other hand, the governments of developing countries do not have the competency and sufficient resources to institute assistance programs to SMEs.

3. Emergence of SMEs in PS countries

In this section, I analyze the emergence of SMEs in PS countries literally from scratch after the collapse of the omnipotent state owned economy. I touch on the necessity of the rise of entrepreneurship due to the arrival of market ideology as well as loss of stable jobs as a result of the closing of the state companies. I evaluate the contribution of the different kinds of SMEs to market building and economic development in PS countries especially with regard to their innovative capacity.

The share of GDP attributable to SMEs is not homogeneous across PS countries. It varies from 8 percent in Belarus, 22.9 percent in Russia, 47 percent in Ukraine and 64 in Hungary (Figure 1). In general, this indicator averages from 23 percent in the CIS to 41 percent in CEE countries (Anders 2012). The number of SMEs per 1000 people varies across countries. Romania performs worst with 29, whereas Hungary and Latvia share the same place at 70, while Poland lies behind them at 55. Slovakia and Czech Republic, however, are the best performers, at 103 and 115, respectively. There is non-linear correlation between this indicator and GPD per capita.

In communist ideology, private property was forbidden and not respected during the socialist period in PS countries. Nevertheless, private, self-employed, and small entrepreneurs existed within the socialist system. In most countries, their activity was illegal but tolerated, while in couple of countries like Hungary and Poland, a limited level of small business activity was legally permitted. Nevertheless, it is literally possible to say that all PS countries began to build up their SMEs from scratch. Smallbone and Welter (2001) emphasize that in order to transform into functioning market economies, the PS countries have to promote privatization, market liberalization, and market reforms. The rise of SMEs is part of the privatization process, and it can be in the form of new enterprises or privatization of state-owned enterprises. SMEs can be both a consequence and the driving force of the marketization process. The initial necessary market environment promotes the flourishing of SMEs. At the same time, the rise of SMEs can create the power to affect government as well as society to create and to shift to a market economy.

Figure 1 Contribution of SME to GDP in PS countries

Country	SME Contribution to GDP (percent)
Hungary	64 [1998]
Lithuania	55 [1998]
Poland	54 [1998]
Czech Republic	53 [1998]
Latvia	50 [1998]
Tajikistan	43 [2006]
Azerbaijan	41 [2003]
Bulgaria	39 [2005]
Georgia	39 [1998]
Uzbekistan	38 [2006]
Slovak Republic	37 [2005]
Armenia	35 [2003]
Ukraine	30 [1998]
Russian Federation	23 [1998]
Kazakhstan	22 [1998]
Belarus	8 [2006]

Source: Anders (2012)

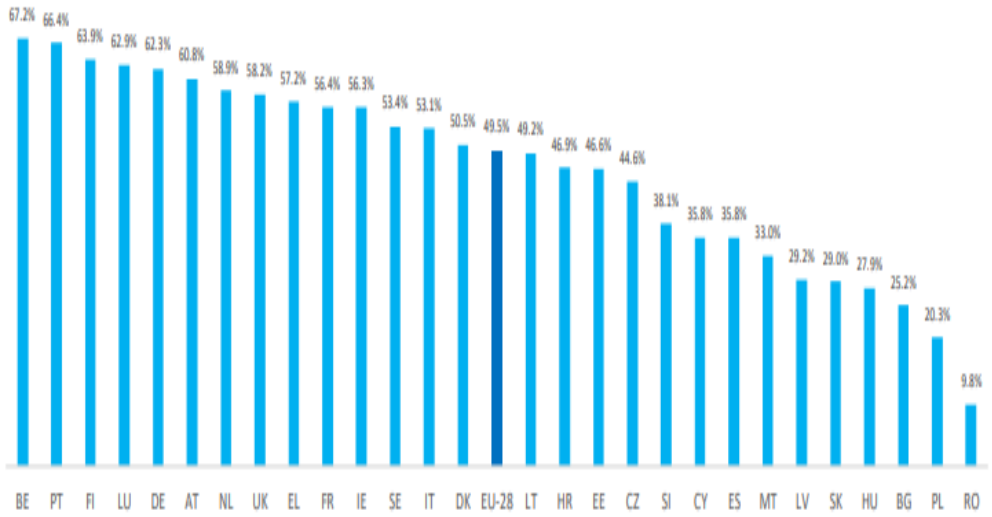
Given the reality of the literal non-existence of private enterprises during socialism, analyzing the source of emerging SMEs is helpful to understand the state of SMEs in PS countries in the early transition period. The understanding of the initial emergence of SMEs is helpful in defining the quality of these small businesses in the early stages of transition in these countries. On the basis of this understanding, it would appropriate to determine the needs of the SMEs and prepare SME development policies.

One of the most important reasons for starting business in the transition period was related to job losses and insufficient income from employment. As a result of the collapse of the relations of production and trade among socialist countries developed during socialism, privatization as well as the incapability of state companies to compete in new market environments, these countries faced significant levels of unemployment in the new social-economic system, conditions not experienced during socialism. So, people who found themselves unemployed and earning insufficient income from what jobs they had, began to do trade and service business in order to survive. Literally, all such self-employed and small business activity was outside of the official registration (Malle 1996). The approach of the Birmingham (UK) model is partially applicable for explaining the emergence of SMEs in the PS transition economies (Smallbone–Welter 2001). This model claims that the rise of self-employment and small business activities was a result of the collapse of the industrial sector, consequently diminishing of job opportunity (Storey–Johnson 1987). However, in Hungary, the number of self-employed people fell from 567,100 to 486,300 from 2000 to 2007 (Hungarian National Statistics). As mentioned above, the majority of the self-employed entrepreneurs were fired workers. As the economy recovered, they went back to their professions.

In order to evaluate the contribution of the SMEs to economic transformation in general and to economic development in particular, it is purposeful to study them in categories related to their growth potential. In general, various approaches to the definition of the enterprise can be employed to test the specific features of the emerging SMEs in PS countries. "Kirzner (1973) regarded an entrepreneur as a person who can spot an information asymmetry and take advantages of it, an arbitrager" (Hashi–Krasniki 2010, p2). In its original context, Kirzner suggested this definition of an entrepreneur to compare the capitalist and socialist system, rather than to classify entrepreneurs in a capitalist environment. However, there is always imperfect knowledge of an economy regardless of in a capitalist or socialist system, and entrepreneurship is the most efficient way to minimize this asymmetry. However, Hashi and Krasniki (2010) misunderstand Kirzner`s entrepreneur as a short-sighted trader. Despite, this misunderstanding they can correctly depict the growth capacity of entrepreneurs in PS countries. In the initial stage of transformation, the existent shortage opened the room trade style business activity. Since, the availability of produce was the top priority rather than its quality. The contribution of this type of entrepreneurship to economic development is limited, since it can avoid shortage and alleviate unemployment, but is not able to carry out structural change.

Another distinctive approach to defining the entrepreneur is the Schumpeterian type approach. According to Schumpeterian approach, the entrepreneur is an innovator who introduces a new product, new production process, and new organizational structure, as well as identifying new markets (ibid). Estrin et al. (2006) classify entrepreneurship as necessity-driven and opportunity-driven. A considerable share of necessity driven entrepreneurship is observable in the successful reformers of the CEE after the first phase of transition. In the initial stage of transition, the majority of small businesses mushroomed in the trade and low value service sectors rather than in manufacturing industry. After the ebbing of the turmoil of falling production, surging unemployment, and high levels of inflation, these countries managed to promote innovative entrepreneurship (Smallbone–Welter 2001). Due to the incompleteness of market reforms, the majority of the SMEs sector of the former Soviet states consisted of low value business (ibid). The effect of the surrounding environment is important for the emergence of the Schumpeterian innovative entrepreneur, and I will touch on it in the next section in more detail. Figure 2 shows the innovation capacity of the PS countries which joined the European Union in comparison with other EU member countries. However, the innovation capacity of the aforementioned PS countries is below than EU average, while the successful CEE and Baltic countries such as Latvia, Estonia, Czech Republic, and Slovenia passed this stage with aplomb, and accumulated a significant share of innovative SMEs.

Figure 2 Share of small and medium-sized EU-28 SMEs which reported having undertaken some innovation activity over the period 2014–2016.



Source: European Commission (2019)

Scase (1997) introduces the relationship between the informal economy and innovation capacity of SMEs. He contrasts the "entrepreneurs" phenomena with the "proprietors" one. The entrepreneur is inclined to capital accumulation and enlargement of business, while the proprietor is the asset and property owner, consumes the surplus from business, and hardly contributes to capital accumulation. Scase claims that the proprietorship type of small business prevailed in the SMEs of PS countries in the early transition period (Scase 1997). At the same time, the level of informal economy contributes to which type of small business prevail. As the informal economy is bigger, then the small entrepreneurs will not have stimuli to invest in long-term capital accumulation. Because, there is always greater uncertainty in informal economy. The share of the informal economy in Hungary was at 34% of GDP in 1990 and levelled off at 10–17% in the 2000s (OECD 2017).

4. Impediments to the development of SMEs in PS countries

There are significant obstacles to the development of the SMEs in PS countries, due to the special historical circumstances of the emergence of private property. Modern capitalist private property literally never arose in the FSU countries until the demise of socialism, and it was stopped by forced socialism in CEE countries. Therefore, these countries did not have the experience of private property, and the legal and social environment and the production factor were not designed for the functioning of private property. As a result of these factors, the economies of the PS countries were not ready to form a favorable environment for the development of SMEs.

In the transition process, innovative SMEs are important for economic restructuring. Therefore, the level of the SME-led innovation and the environment conducive to such innovation will now be analyzed. For the sake of easier understanding, I employ the Bartlett and Bukvic's approach. They categorize the factors which impede the growth of SMEs under five categories; institutional, internal to firm, external, financial, and social barriers (Bartlett–Bukvic 2001). These categories cover all decisive factors which can affect the development of SMEs. I will use this categorization as an analytical framework. I show that some countries perform better than others on these factors. At the same time, there are improvements in these factors in the same country within the transition period. Subsequently, I will analyze the role of SME-led innovation in economic restructuring and economic development for EU member PS countries.

Institutional barriers: Bartlett and Bukvic define the institutional environment as an interaction sphere of firms with government and their consumers, and they pay attention to effects of interaction with government on firm growth. They analyze the effect of this interaction in the duality of official and non-official institutions (Bartlett–Bukvic 2001). As official institutions, they propose the effects of taxation and the legal framework for the regulation of business activity on SME growth. According to them, an inappropriate tax system and complicated regulations wastes the already insufficient resources of small growing companies. İn the early years of the transition, the PS countries did not have the legal framework for taxation or the regulation of business activity. Thus, the majority of these countries just copied the respective legislation of the developed social market economies of continental Europe without considering the needs of their newly emerging businesses. The corporate tax rate in Poland was 40 percent in 1990 but was reduced to 19 percent in 2004 (Rae 2015). The same tendency can be observed in Bulgaria. The corporate tax rate was 40 percent at its peak in 1997 and today is 10 percent (Trading Economics). Such a high tax rate was smothering small nascent business entities, especially those self-employed businesses. To some extent, all PS countries began from such a high level of income tax rate excepting some countries like Kazakhstan and Kyrgyzstan (Anders 2007).

In addition to the high level of income tax rate, the over-complicated business regulations are stifling for small companies. The small entrepreneurs, especially those sole-trader and classic partnerships, are not capable of complying with complex regulation. Bartlett and Bukvic state that such an unfriendly government attitude to business opens the door to the informal economy. Many entrepreneurs are willing to pay bribes to avoid the headache of compliance with such a heavy regulation (Bartlett–Bukvic 2001). The successful reformers of CEE countries passed this stage and managed to create business-friendly conditions for SMEs. Meanwhile, the majority of the FSU countries are partially still trapped in this stage. Smallbone and Welter (2007) write that in their slow reforms the government sets taxation and business regulation to squeeze tax revenue rather than promote the building of market institutions. The majority of CIS countries lack the capable government to pursue economic policy conducive to development of SMEs. Anders proposes that the bureaucratic apparatus of the weak PS states complicate the tax and legal system

intentionally in order to grasp bribes from micro-enterprises (Anders 2012). He suggests that firstly, the legal procedure for SMEs should be simple. Thus, there would be minimum opportunity for incumbents to exploit SMEs. Secondly, the conventional wisdom of treating all enterprises equally does not prove a reality in PS countries, since taxation and regulation involves economies of scale. The larger companies have separate divisions to handle legislation and taxation, so it gives them more opportunity to minimize tax costs in comparison with SMEs. Therefore, simplified taxation and regulation is a recommended option for transition economies in providing favourable initial conditions for emerging SMEs (Hellman et al. 2000 Anders 2012). However, since 2011, there has been consistent improvement in the ease of doing business index for Russia, Ukraine, Azerbaijan, and Armenia (The World Bank).

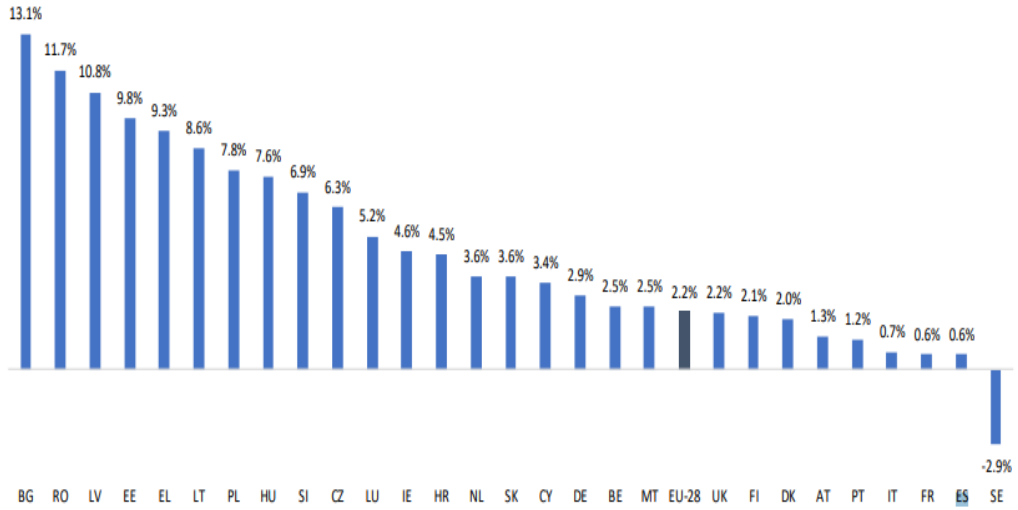
An unwelcoming government attitude towards small business opens the possibility for the rise of the informal economy. "Frequent changes in the tax system, combined with a prohibitive tax level and an unpredictable behavior of state officials, encourage entrepreneurs to shift some or all their activities to the informal economy, or in some cases abroad" (Smallbone–Welter 2001, 11). Cumulatively, USD 750 billion capital has left Russia due to capital flight since 1994 (Bloomberg). In the early stage of the transition in Poland, Romania, and Slovakia, the small businesses hide their actual revenue due to high levels of corruption (Johnson et al. 2000). A. Anders points to weak state apparatus as a reason for the prevalence of bureaucratic corruption and unregistered business activity (Anders 2012).

Barriers internal to firm: These barriers entail the obstacles to exploit the potential of the firm due to human resource and organizational management problems. One side of the problem is connected with labor legislation and other side quality of labor and managerial skills. One of the features distinguishing small companies from larger ones is their ability to adjust their production to market demand via firing and hiring labor (Sak–Taymaz 2004). In the early period of the transition, the governments of most of the PS countries did not take this reality into consideration, and labor legislation was not flexible either as it put a high rate of social contribution costs for workers on employers. in effect, small entrepreneurs are unwilling to expand their business by employing more permanent workers (Bartlett–Bukvic 2001). Such a burden on small entrepreneurs led to rampant non-registration of labor in the weak states of PS countries. Integration into European Union and competition among PS countries to attract foreign capital resulted in flexibilization of labor legislation and the labor market, especially in PS countries. Since 2004, the great majority of the employees in Poland work on non-fixed labor contracts (Rae 2015).

The second impediment on the growth of SMEs in PS countries is the quality of labor and managerial skills. Due to the coordination of all human capital to the configuration of the centrally-planned economy, in the early stage of transition, it would be hard to find capable employees to work in the reality of the market economy (Bartlett–Bukvic 2001). As well as managers for small companies, the market and business lacked development skills (ibid). Even though the majority of small entrepreneurs were university graduates, they lacked those managerial skills necessary in the market economy (Smallbone and Welter 2001). The uncertain

environment and macroeconomic instability of the early transition period put more demands on the managerial skills of SMEs (Aidis 2005). Another problem with managerial competency is the unwillingness of the owners to delegate the managing to professional managers when the company has reached this point and it is necessary for the growth of the company (Bartlett and Bukvic 2001). Figure 3 depicts labor productivity growth in EU member PS countries being significantly higher than for developed members of the Union. It can be explained by growth opportunity of those countries and the growth conducive policies of respective states.

Figure 3 Annual SME apparent labor productivity growth (in %) in EU-28 Member States 2018



Source: European Commission (2019)

External barriers: Bartlett and Bukvic define external barriers as the impediments on the growth of the company which result from the market environment companies are in (Bartlett–Bukvic 2001). The low level of demand for product due to low purchasing power of the consumers is one factor that impedes company in enlarging production (Bartlett–Bukvic 2001, Aidis 2005). The entrepreneurs lack incentive to conduct quality improvement of the product since the consumers are not able to pay the higher price for quality, and price is the main determinant. As a result of the considerable growth in GDP and labor income, the successful CEE countries managed this problem up to manageable level. But in the majority of the FSU and Southeastern European countries, the insufficiency of demand impedes the growth of small businesses.

Access to inputs and technological opportunities is another decisive factor. From another perspective, due to the small amount of purchasing of inputs by small business, and as also to pressure from larger companies to expel small companies from the market, suppliers would sell inputs at higher than market price to SMEs and be

reluctant to share technological advancement with small companies. In such a case, government regulation is necessary. The late payment of bills by customers is another reason which disturbs the continuity of business activity at small firms (Bartlett–Bukvic 2001). The main reasons for late payment are the low purchasing power of end consumers and the ineffectiveness of the compelling authorities to enforce payment of the bill in time. The Polish government enacted the regulatory act on late payments on commercial transaction. According to this legislation, the creditor has the right to implement a penalty after 60 days of delayed payments (Korolko 2013)

Financial barriers: Insufficient capital is the decisive impediment on the development of small business. Capital is important in the setting up and expansion stage of SMEs. Due to lack of access to capital in these necessary phases, a significant share of small companies never emerge, and existing SMEs stay small in the majority of PS countries (Oakey 2007). The main reasons for the reluctance of lenders to supply SMEs with capital are their size and risk due to asymmetric information. With regard to size, it costs more to check the prospects of one business entity for a small loan by an SME compared to a huge amount of borrowing by larger corporations. Secondly, poor accounting management in SMEs could be considered the main factor for the emergence of asymmetric information between lender and company. That is the financial intermediates do not have proper record of the business activity to evaluate the prospects of the applicants (Bartlett–Bukvic 2001). As a result of these factors, the cost of capital is significantly higher for small companies.

Bank loans are the main source of external capital for SMEs in PS countries. The commercial banks prefer to lend to companies with fixed assets. They are not able to evaluate the prospects of SMEs in the modern sectors like internet-related, new technologies, and biotechnologies. Since in these sectors, companies have insufficient amounts of fixed assets, it is hard to define market and market demand. As a result, such progressive sectors lack the necessary amount of capital (Klonowski 2012).

Social barriers: In order to understand the social barriers on the development of SMEs in PS countries, Bartlett and Bukvic (2001) introduce the "social capital" phenomena in business environment. They define social capital in business as the trust and network between entrepreneurs. A weakness of trust among business partners initiates opportunistic behavior, and this results in the higher cost of transaction and preempt of transaction. The main reason for the emergence of such a social barrier is state apparatus too weak to enforce the property rights and the existence of a larg informal economy. Until recently, the "rackets" in Russia and similar illegal powers in some other PS countries were the judges of business due to inability of the states to function. Thus, the PS countries which integrated into the European Union succeeded in incorporating the government assistance to SMEs mechanism as a tool of overcoming the social barriers on SMEs. Despite, in the early years of transition, mistrust among business partners being higher, upon integrating into the EU, it weakened as a hampering factor. According to the latest survey, 6.5 percent of the respondents indicate the lack of collaboration as a hampering factor in their innovative activity (EC 2019)

As mentioned above, a significant share of SMEs emerged as a survival strategy of fired workers and lacked entrepreneurship quality. The SMEs which can

contribute to the upgrading the efficiency of production technology are important in this study. I refer to the concept of the innovation led by SMEs in order to evaluate the contribution of SMEs to restructuring transition economies. I employ the findings of the EC Report on the contribution of SMEs in patenting, and interpret them according the aim of this paper (EC 2014). The report covers the EU-27 countries including PS member states. The first finding shows that SMEs in the post-socialist EU member countries have more participation in patent applications than old members (Figure 1). It confirms that the role of the SME is significant in restructuring the transition economies via innovations.

Figure 4 Patent applications by EU members

Country	Large	Unknown — non-matched	Unknown — matched	SME
EU-27	78.9	2.3	1.2	17.6
BE	79.2	0.0	2.6	18.2
BG	36.8	9.5	0.0	53.8
CZ	60.1	2.8	0.0	37.1
DK	67.2	3.7	1.5	27.6
DE	84.9	2.8	2.0	10.3
EE	19.9	0.0	2.3	77.8
IE	50.4	2.6	2.8	44.1
EL	46.1	14.4	0.0	39.6
ES	61.3	3.8	0.0	34.8
FR	83.4	2.4	0.1	14.1
IT	60.8	2.0	0.2	37.1
CY	28.3	9.0	0.0	62.7
LV	33.7	9.5	0.0	56.8
LT	50.5	0.0	0.0	49.5
LU	49.4	11.5	0.0	39.1
HU	59.3	3.8	0.0	37.0
MT	23.4	2.3	0.0	74.3
NL	83.8	0.9	0.7	14.6
AT	77.2	1.9	0.0	20.9
PL	62.0	0.0	4.0	34.0
PT	42.7	6.0	2.8	48.5
RO	46.9	0.0	5.6	47.5
SI	62.8	3.0	0.0	34.2
SK	43.7	5.3	0.0	51.0
FI	83.6	2.2	0.9	13.2
SE	78.8	2.2	0.2	18.9
UK	62.1	1.4	1.2	35.3

Source: European Commission (2014)

Another finding indicates the innovation intensity of SMEs across various technology sectors (Figure 2). The indication ratio is between –1 and 1. As the ratio is close to 1, it means SME innovation is strong in this sector. There is a rough positive relationship between degree of SME intensity and the national specialization. Therefore, it can be surmised that SME-led innovations have the positive effect of heightening national competitiveness. Due to lack of reliable data, the paper limits itself to CEE countries in concluding on the role of SME-led innovation on economic restructuring.

There are a couple of factors that can contribute to the flourishing of SME-led innovation. By referring to Bartlett and Bukvic's approach, it can be said that those group of PS countries succeeded in surpassing the barriers on the development of SMEs. In order to be accepted as a member of the EU, these countries have had to adjust their legislation to EU standards. Such institutional harmonization has created a favorable business environment for enterpreneurship to thrive. As a result, institutional barriers have been alleviated. The transition period was accompanied by a considerable rise in the wages of skilled labor (Kezdi 2002). This incentive led to a rise in human capital accumulation. So the internal to firm barriers such as lack of skilled labor force have been overcome. The existence of the large EU market allowed the bypassing of external barriers related to market and input suppplies, incentivizing entrepreneurship activity on the SME level. At the same time, the existence of foreign competition via the single market forces SMEs to innovate. Free movement of capital via foreign owned banks finances innovation by SMEs and lessens the effects of financial barriers. The institutional harmonization and strengthening of the legislative and enforcement capacity of states further weakened social barriers among business units.

Figure 5 Sectoral distribution of patents accross EU member countries

Fh036	Field of technology	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
1	Electrical machinery, apparatus, energy	-0.09	-1.00	-0.32	-0.28	-0.20	0.07	0.68	0.42	-0.04	-0.24	-0.11	-1.00	-1.00	-0.31	0.29	0.09	0.00	-0.22	-0.23	0.07	-1.00	0.24	0.22	-0.05	-0.02	0.10
2	Audio-visual technology	0.07	0.15	0.38	-0.31	-0.01	0.07	-0.61	-1.00	-0.28	-0.12	0.05	0.06	-1.00	0.37	-1.00	-1.00	-0.76	-0.01	-1.00	0.27	-1.00	-1.00	0.22	-0.22	-0.23	-0.02
3	Telecommunications	0.62	0.15	0.38	-0.04	-0.23	0.07	0.09	0.42	-0.22	-0.57	-0.41	-0.09	-1.00	-0.01	-1.00	0.14	-0.62	-0.10	0.42	-0.03	0.32	0.84	0.22	-0.77	-0.77	-0.11
4	Digital communication	0.76	0.15	-0.06	0.07	-0.24	0.07	0.07	-1.00	0.03	-0.48	-0.63	-1.00	-1.00	-1.00	0.76	0.14	-0.72	0.10	-1.00	0.35	0.32	-1.00	0.22	-0.77	-0.85	-0.20
5	Basic communication processes	0.72	-1.00	-1.00	-0.64	-0.27	-1.00	0.33	-1.00	0.46	-0.21	-0.21	-1.00	-1.00	-1.00	-1.00	-1.00	-0.88	-1.00	-1.00	-1.00	-1.00	0.84	-1.00	-0.84	-0.19	-0.14
6	Computer technology	0.26	0.15	-0.39	0.14	-0.15	0.07	-0.60	0.42	-0.08	0.05	-0.16	-0.49	-1.00	-0.06	-1.00	0.08	-0.63	0.17	0.22	0.07	-1.00	0.86	0.22	-0.24	0.03	-0.12
7	IT methods for management	0.72	-1.00	0.52	0.28	0.01	0.07	-0.54	0.42	0.39	-0.19	0.22	-1.00	-1.00	-0.18	-1.00	0.14	0.25	-0.27	-1.00	-0.19	0.32	0.88	0.22	0.12	-0.16	0.24
8	Semiconductors	-0.17	-1.00	-1.00	0.16	-0.01	-1.00	-1.00	0.42	-0.43	0.27	-0.02	0.09	-1.00	-0.68	-1.00	-1.00	-0.37	-0.30	0.42	0.35	-1.00	0.88	-1.00	0.52	0.05	0.28
9	Optics	-0.52	0.15	0.38	0.07	-0.05	0.07	-0.02	-1.00	-1.00	0.26	-0.29	0.23	-1.00	0.44	-1.00	0.14	-0.42	0.01	-0.34	0.35	-1.00	0.63	-1.00	0.40	0.37	0.02
10	Measurement	0.36	-1.00	0.09	0.21	0.00	-0.07	0.15	-1.00	0.03	0.01	0.00	0.03	-1.00	-0.86	-1.00	-0.81	-0.47	0.05	-0.13	0.01	-1.00	0.41	-0.12	0.17	0.18	-0.08
11	Analysis of biological materials	0.53	-1.00	-1.00	0.31	0.56	0.07	-0.11	0.42	0.35	0.52	0.31	0.23	-1.00	0.22	0.76	0.14	0.51	0.60	-1.00	0.35	-1.00	-1.00	-1.00	0.69	0.72	0.26
12	Control	0.14	0.15	0.03	0.13	-0.30	0.07	-0.09	0.42	0.08	-0.23	0.08	-1.00	-1.00	-1.00	0.76	-1.00	0.07	-0.52	-0.09	-0.03	-1.00	-1.00	0.22	0.28	-0.17	0.05
13	Medical technology	0.66	-0.38	0.13	-0.39	0.36	-0.04	0.10	-1.00	0.24	0.65	0.18	0.03	-1.00	0.47	0.71	0.02	-0.05	0.33	0.10	0.35	0.32	-1.00	0.22	0.55	0.19	0.17
14	Organic fine chemistry	-0.50	0.15	-0.18	-0.01	-0.22	-0.02	-0.10	-0.16	-0.26	-0.33	-0.39	0.01	-1.00	0.43	-0.47	-0.27	-0.37	-0.14	-1.00	-0.40	-1.00	-1.00	-1.00	0.23	0.23	-0.39
15	Biotechnology	0.27	0.15	-0.23	-0.16	0.57	-0.15	-1.00	0.42	0.48	0.73	0.20	0.23	-1.00	0.17	0.38	0.14	0.62	0.49	0.49	0.13	-1.00	0.28	-1.00	0.69	0.62	0.29
16	Pharmaceuticals	0.01	-1.00	0.36	0.31	0.41	-0.04	-0.08	-1.00	-0.22	0.57	-0.20	0.08	-1.00	0.46	-0.73	-0.58	0.50	0.31	-0.27	-0.05	-0.01	-1.00	-0.63	0.78	0.43	0.11
17	Macromolecular chemistry, polymers	-0.61	-1.00	0.51	-0.50	-0.27	0.07	-0.85	0.42	-0.08	-0.59	-0.68	0.23	-1.00	0.25	0.76	0.14	-0.28	-0.14	-1.00	-0.10	-1.00	-1.00	-1.00	-0.68	0.45	-0.07
18	Food chemistry	0.27	-1.00	0.63	-0.25	0.56	-0.13	0.31	-1.00	0.47	0.55	0.16	-1.00	-1.00	-1.00	0.42	-1.00	0.31	-0.16	-0.01	0.35	-1.00	-1.00	0.22	0.33	0.78	-0.26
19	Basic materials chemistry	-0.37	-1.00	0.48	-0.22	-0.15	-0.10	-0.28	0.42	0.21	-0.16	-0.32	0.15	-1.00	-0.05	0.10	0.14	-0.36	-0.14	-0.06	-0.26	-1.00	-1.00	-1.00	-0.28	0.52	-0.24
20	Materials, metallurgy	-0.12	0.15	0.28	0.09	-0.08	-1.00	-0.66	-1.00	0.01	-0.04	-0.18	-1.00	-1.00	-0.81	0.57	0.14	-0.63	-0.44	0.13	-0.59	0.32	-1.00	-0.31	0.55	0.00	-0.21
21	Surface technology, coating	-0.42	-1.00	0.48	-0.08	-0.03	0.07	-1.00	0.11	0.00	0.01	-0.02	0.08	-1.00	-0.05	-1.00	0.13	0.12	-0.18	0.37	-0.10	-0.12	-1.00	-1.00	0.67	-0.03	-0.04
22	Micro-structure and nano-technology	0.58	-1.00	-1.00	0.13	-0.43	-1.00	-1.00	-1.00	0.70	0.08	-0.27	-1.00	-1.00	0.17	-1.00	-1.00	0.11	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	0.62	0.82	0.22
23	Chemical engineering	0.00	-1.00	0.42	0.11	0.10	-0.02	0.26	0.28	0.06	-0.12	0.18	0.23	-1.00	-0.08	0.61	-0.27	0.18	0.31	0.26	-0.25	-0.21	-1.00	-1.00	0.35	0.43	-0.08
24	Environmental technology	-0.04	-1.00	0.15	0.19	-0.01	-1.00	0.67	0.42	-0.15	-0.20	0.15	-1.00	-1.00	-0.86	0.76	0.14	0.12	0.07	0.45	0.24	0.32	-1.00	0.22	0.52	0.26	-0.10
25	Handling	-0.04	-1.00	0.22	0.08	0.11	-0.27	-0.66	0.42	0.06	0.03	0.09	0.09	-1.00	-0.03	0.76	-0.06	0.50	0.01	0.22	0.26	0.32	0.85	-1.00	-0.19	0.12	0.02
26	Machine tools	0.13	-1.00	-0.06	0.27	0.11	-1.00	-0.49	-0.77	-0.17	0.07	0.19	-0.06	-1.00	-0.62	-1.00	0.12	0.64	-0.38	-0.34	-0.04	-1.00	-1.00	-0.31	0.55	0.12	-0.09
27	Engines, pumps, turbines	-0.11	-1.00	-1.00	-0.77	-0.56	-1.00	0.74	0.11	-0.48	-0.75	-0.22	-1.00	-1.00	-0.67	-1.00	-1.00	0.51	-0.22	-1.00	0.01	-1.00	0.68	-1.00	0.28	-0.13	-0.19
28	Textile and paper machines	-0.67	-1.00	-0.83	0.32	0.25	0.07	-0.59	-1.00	0.53	-0.26	0.09	0.16	-1.00	-0.40	-1.00	0.08	0.10	-0.10	-1.00	-0.19	-1.00	-1.00	-1.00	-0.18	0.22	0.06
29	Other special machines	-0.28	-1.00	0.09	0.04	0.08	0.07	0.09	0.23	-0.12	0.20	0.03	0.23	-1.00	-0.31	-1.00	-0.02	0.49	0.08	0.19	0.06	-1.00	0.77	0.22	0.40	-0.08	0.09
30	Thermal processes and apparatus	-0.59	-1.00	0.19	-0.24	0.06	0.07	0.71	-1.00	-0.06	0.02	0.00	-0.11	-1.00	-0.58	0.76	0.14	0.53	0.15	-0.33	-0.26	-1.00	0.17	0.22	0.32	-0.27	0.17
31	Mechanical elements	0.00	0.15	0.08	-0.17	-0.32	-1.00	0.02	-1.00	0.03	-0.53	0.06	-1.00	-1.00	-0.90	-1.00	0.09	0.60	-0.23	0.23	-0.36	-1.00	0.65	0.19	0.03	-0.32	-0.07
32	Transport	-0.30	-1.00	-0.85	0.19	-0.51	0.07	0.35	0.42	-0.34	-0.69	-0.04	-0.06	-1.00	-0.91	-1.00	-1.00	0.45	0.13	0.35	0.19	0.32	0.51	-0.73	0.50	-0.52	-0.06
33	Furniture, games	-0.15	0.15	-0.01	0.31	0.10	0.07	-0.34	-1.00	0.33	0.16	0.11	-1.00	-1.00	-1.00	-1.00	0.14	0.48	-0.44	-0.41	0.26	-1.00	0.34	-1.00	0.52	0.38	0.17
34	Other consumer goods	-0.72	-1.00	0.12	-0.05	-0.02	-1.00	0.47	0.42	0.18	0.02	0.06	-0.41	-1.00	-0.80	-1.00	0.14	0.07	-0.42	-0.69	0.26	0.32	-1.00	0.22	0.43	0.41	0.01
35	Civil engineering	0.11	0.15	-0.03	-0.20	0.32	0.07	-0.53	0.42	0.23	0.08	0.20	0.05	-1.00	-0.72	-1.00	0.14	0.24	-0.17	-0.62	-0.51	0.32	-1.00	-1.00	0.48	-0.17	0.11

Source: European Commission (2014)

5. Conclusion

SMEs have special importance for PS countries due to their innovative and labor absorptive capacity. Hence, transition economies need their innovation for shifting to efficient form of production and to alleviate unemployment problems. One distinctive fact about the small entrepreneurs in PS countries was that they were not innovative enough in the early phase of transition. The majority of the small entrepreneurs were in the trade and service sectors in the form of sole-traders and partnerships. Thus, the growth and innovative potential of these SMEs were limited in the early stage of the transition. However, some of the PS countries were successful in passing through this stage and promoting innovation-driven SMEs

After the legalization of private business in PS countries, SMEs mushroomed. However, there have been couple of factors which have limited the growth and development of SMEs. The attitude of the government in the form of legal environment and control was not suitable for the needs of small business in the initial period of the transition. There is dual tendency among PS countries regarding the development of the SME-led innovation. Some of the PS countries, especially those integrated into European Union were able to build an initial business-friendly environment and provide government assistance to SMEs in the next period of reforms. While these PS countries has been able to provide SMEs access to finance through government assistance, others have not. The SMEs in EU member PS countries are capable of innovating and have significantly contributed to strengthening the international competitiveness of their economies.

Considering the reasons for much the better performance of SMEs in CEE countries, the modification of tax legislation, business regulation and labor legislation conducive to growth of SMEs, as well as building a bureaucracy immune to bribes could be a first step to promoting small companies with growth potential in worse performing regions. Provision of government assistance to tackle the problem of access to finance and inputs and technologies would be another cornerstone in the promoting of a business-friendly environment for SMEs. Last but not least, the strengthening the enforcement of contract law could avoid uncertainty in the business community.

References

Acs, Z. – Audretsch D. (1988): Innovation in Large and Small Firms: An Empirical analysis. *American Economic Review*, 78, 4, 678–690.

Aidis, R. (2005): "Institutional barriers to small and medium-sized enterprise operations in transition countries". *Small Business Economics*, 25,4, 305–317.

Anders, A. (2007): *How Capitalism Was Built, The Transformation of Central and Eastern Europe, Russia, and Central Asia*. Cambridge University Press, Washington D.C.

Anders, A. (2012): How entrepreneurship could be promoted after the collapse of a socialist economic system. *Journal of Asian Economics*, 2, 2, 157–167.

Bartlet W. – Bukvic V. (2001): SME development, Economic Policy in Transition Economies, 11, 2, 177–195.

Borgia, D. – Newman, A. (2012): The influence of managerial factors on the capital structure of small and medium-sized enterprises in emerging economies, Evidence from China, Journal of Chinese Entrepreneurship, 4, 3, 180 – 205.

Bloomberg: Russia Lost $750B to Capital Flight since 1994, 12 March, 2019

EC (2014): *Patent statistics at Eurostat: Mapping the contribution of SMEs in EU patenting*. European Comission, Brussels.

EC (2019): *Annual Report on European SMEs 2018/2019, Research & Development and Innovation by SMEs*, European Commission, Brussels.

Estrin, S. – Meyer, E. – Bytchkova, M. (2006): Entrepreneurship in transition economies, in Casson, M. – Yeung, B. – Basu, A. – Wadeson, N. (Eds), Oxford *Handbook of Entrepreneurship*, Oxford, Oxford University Press.

Hashi, I. – Krasniki, B. (2010): Entrepreneurship and SME growth: evidence from advanced and laggard transition economies. *International Journal of Entrepreneurial Behaviour & Research*, 17, 5, 456–487.

Hellman, S. – Jones, Kaufmann D. – Schankerman, M. (2000): *Measuring governance and state capture: The role of bureaucrats and firms in shaping the business environment*. mimeo. the EBRD and the World Bank.

Ivanyi, B. – Vigvari, G. (2012): Spillovers from foreign direct investment in Central and Eastern Europe, an index for measuring a country's potential to benefit from technology spillovers. *Society and Economy*, 32, 1, 51–72.

Iwasaki, I. – Csizmadia, P. – Illesy, M. – Mako, C. – Szanyi, M. (2012): The Nested Variable Model of FDI Spillover Effects: Estimation Using Hungarian Panel Data. *International Economic Journal*, 26, 4, 673–709.

Johnson, S. – Kaufmann, D. – McMillan, J. – Woodruff, C. (2000): Why do firms hide? Bribes and unofficial activity after communism, *Journal of Public Economics*, 76, 3, 495–520.

Kirzner, I. (1973): *Competition and Entrepreneurship*. University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship.

Kezdi, G. (2002): *Two Phases of Labor Market Transition in Hungary: Inter-Sectoral Reallocation and Skill-Biased Technological Change*. Budapest Working Papers on Labor Markets, Budapest.

Klapper, L. – Laeven, L. –Raghuram, R. (2006): Entry regulation as a barrier to entrepreneurship. *Journal of Financial Economics*, 82, 3, 591–629.

Klonowski, D. (2012): Liquidity gaps in financing the SME sector in an emerging market: evidence from Poland. *International Journal of Emerging Markets*, 7, 3, 335–355.

Korolko, P. (2013): *Extended Settlement Period of Working Time*. Peter Korolko Law Firm, Warsaw.

Parrilli, M. D. (2007): *SME Cluster Development, A Dynamic View of Survival Clusters in Developing Countries*. Palgrave Macmillan, London.

Malle, S. (1996): Russian Entrepreneurship and Business in Transition: Towards the Re-Building of State Conglomerates, Journal of International and Comparative Economics 20(1), pp. 37–64

OECD (2017): Shining Light on the Shadow Economy: Opportunities and Threats. Organization for Economic Cooperation and Development, Paris

Oakey, R. (2007): A commentary on gaps in funding for moderate 'non-stellar' growth small businesses in the United Kingdom, Venture Capital, *An International Journal of Entrepreneurial Finance*, 9, 3, 223–235.

Piore, M. – Sabel, C. (1984): The Second Industrial Divide, Basic Books, New York

Rae, G. (2015): *Privatising Capital, the Commodification of Poland´s Welfare State*. Peter Lang, Frankfurt am Main.

Sak, G. – Taymaz, E. (2004): *How flexible are small firms? An analysis on the determinants of flexibility*: paper presented at the 11th Annual Conference, Beirut, Lebanon, 14–16 December.

Scase, R. (1997): The Role of Small Businesses in the Economic Transformation of Eastern Europe: Real but Relatively Unimportant, *International Small Business Journal*, 16, 2, 113–121.

Schmitz, J. (1989). Imitation, entrepreneurship and long-run growth. *Journal of Political Economy*, 97, 3, 721–739.

Smallbone, D. – Velter, F. (2001): The Distinctiveness of Entrepreneurship in Transition Economies. *Small Business Economics*, 16, 2, 249–262.

Storey, D. – Johnson, S. (1987): *Job Generation and Labour Market Change*. Macmillan, Houndsmill, Basingstoke and London.

Trading Economics: Bulgaria Corporate tax rate, https://tradingeconomics.com/bulgaria/corporate-tax-rate

WB (2017): *Enhancing the Contributions of the SME in a Global and Digitalized Economy*. World Bank, Paris.

WB: *Ease of Doing Business Index*, https://data.worldbank.org/indicator/IC.BUS.EASE.XQ World Bank